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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/665,159	09/19/2000	Yusaku Fujii	826.1621/JDH	4866

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EXAMINER

KIBLER, VIRGINIA M

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 10/07/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/665,159

Applicant(s)

FUJII, YUSAKU

Examiner

Virginia M Kibler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because "TARGET FEAUTURE POINT" should be changed to "TARGET FEATURE POINT" in Figure 2. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The abstract of the disclosure is objected to because it exceeds 150 words. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 2, 4, 9, 10, 18, 24, 26, 31, 32, 40, 46, and 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "said information" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 4 recites the limitation "said feature information" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitations "the first and the second feature points" in line 7, "the virtual vicinal feature point" in lines 9-10, and "the feature point" in line 10. There is insufficient antecedent basis for these limitations in the claim.

Claim 10 recites the limitation "said information" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "the first and the second feature points" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 24 recites the limitation "said information" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 26 recites the limitation "said feature information" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 31 recites the limitations "the first and the second feature points" in line 6, "the relation" in line 7, "the ridge" in line 7, and "the feature point" in lines 8-9. There is insufficient antecedent basis for these limitations in the claim.

Claim 32 recites the limitation "said information" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 40 recites the limitations "the first and the second feature points" in line 6 and "the feature point" in line 8. There is insufficient antecedent basis for these limitations in the claim.

Claim 46 recites the limitations "the first and the second feature points" in line 8, "the relation" in line 9, "the ridge" in line 9, and "the feature point" in lines 10-11. There is insufficient antecedent basis for these limitations in the claim.

Claim 47 recites the limitations "the first and the second feature points" in line 8 and "the feature point" in line 10. There is insufficient antecedent basis for these limitations in the claim.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-47 are rejected under 35 U.S.C. 102(e) as being anticipated by Fujii et al. (6,233,348).

Regarding claim 1, Fujii et al. ("Fujii") discloses comparing an obtained first fingerprint with a preliminarily registered second fingerprint (Col. 8, lines 23-32), and determining whether or not the fingerprints match each other including a ridge relation obtaining unit obtaining

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relation of a ridge containing a vicinal feature point near a feature point to be checked in a matching process performed on the first and the second fingerprints to the ridge containing the feature point to be checked in the matching process (Figure 4; Col. 9, lines 12-28), and a matching unit performing the matching process by searching the second fingerprint containing the vicinal feature point near the feature point to be checked in the matching process for the relation of the ridge containing the vicinal feature point to the ridge containing the feature point in the first feature point to be checked in the matching process (Col. 11, lines 58-67 and Col. 12, lines 1-2).

Regarding claim 2, Fujii discloses the information about the feature point has a format comprising an identifier assigned to each feature point and corresponding feature information about the feature point (Col. 8, lines 33-38).

Regarding claim 3, Fujii discloses the feature points in the first and second fingerprints are the same feature points when a number of ridges from the feature point to be checked to a ridge containing the vicinal feature point is within a predetermined threshold and when the feature information about the vicinal feature points matches in a predetermined range (Col. 13, lines 15-27).

Regarding claim 4, Fujii discloses when the feature information about the vicinal feature points matches in a predetermined range, a number of ridges between the feature point to be checked and a ridge containing the vicinal feature point matches a value obtained by counting a number of ridges in an opposite direction from the feature point and a number of ridges obtained by counting a number of ridges in a direction from the feature point to the vicinal feature point, it is determined that the feature points are the same feature points (Col. 13, lines 15-28; Figure 10).

Regarding claim 5, Fujii discloses wherein when the first and second fingerprints match in at least one of position, type, and direction of the vicinal feature points, it is determined that the feature information of feature points to be checked contained in the first and the second fingerprints are the same feature points (Col. 13, lines 28-31).

Regarding claim 6, Fujii discloses wherein when the feature points to be checked match in position and direction in a predetermined range, but are different in type, a resultant matching level is low (Col. 12, lines 11-29).

Regarding claim 7, Fujii discloses wherein when the vicinal feature points match in position and direction in a predetermined range, but are different in type a resultant matching level is low (Col. 12, lines 11-29).

Regarding claim 8, Fujii discloses wherein when the feature points to be checked are different in type, a matching process is performed by changing relation between ridges containing the feature points to be checked and the ridges containing the vicinal points (Col. 11, lines 58-67; Col. 12, lines 25-29).

Regarding claim 9, the arguments analogous to those presented above for claim 1 are applicable to claim 9. Fujii discloses a virtual feature point generation unit generating a virtual feature point by referring the first and the second feature points (Col. 8, lines 51-55), a ridge relation obtaining unit obtaining the relation of a ridge containing the virtual vicinal feature point near the feature point to be checked to the ridge containing the feature point (Figure 17), and a matching unit performing the matching process by searching the second fingerprint containing the virtual vicinal feature point near the feature point to be checked for the relation of the ridge

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containing the virtual vicinal feature point to the ridge containing the feature point (Col. 11, lines 31-57).

Regarding claim 10, Fujii discloses the information about the virtual feature point has a format comprising an identifier assigned to each virtual feature point and corresponding feature information about the virtual feature point (Col. 8, lines 33-38; Col. 19, lines 50-67).

Regarding claim 11, Fujii discloses the feature points in the first and second fingerprints are the same feature points when a number of ridges from the feature point to be checked to a ridge containing the virtual vicinal feature point is within a predetermined threshold and when the feature information about the virtual vicinal feature points matches in a predetermined range (Figure 22).

Regarding claim 12, Fujii discloses wherein when the first and second fingerprints match in at least one of position, type, and direction of the virtual vicinal feature points, it is determined that feature information of feature points to be checked contained in the first and second fingerprints are the same feature points (Col. 32, lines 5-56).

Regarding claim 13, the arguments analogous to those presented above for claim 6 are applicable to claim 13.

Regarding claim 14, Fujii discloses wherein the virtual vicinal feature points match in position and direction in a predetermined range, but are different in type a resultant matching level is low (Col. 12, lines 11-29; Col. 25, lines 31-49).

Regarding claim 15, Fujii discloses the virtual feature point is generated by projecting an existing feature point to a vicinal ridge (Col. 19, lines 50-62).

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Regarding claim 16, Fujii discloses the feature information about the virtual feature point is the feature information about a feature point from which a virtual feature point is projected (Col. 19, lines 50-62).

Regarding claim 17, Fujii discloses wherein the feature points to be checked are different in type a matching process is performed by changing relation between ridges containing the feature points and ridges containing the vicinal feature points (Col. 25, lines 31-49).

Regarding claim 18, the arguments analogous to those presented above for claims 1 and 9 are applicable to claim 18.

Regarding claim 19, the arguments analogous to those presented above for claim 13 are applicable to claim 19.

Regarding claim 20, the arguments analogous to those presented above for claim 14 are applicable to claim 20.

Regarding claim 21, Fujii discloses a matching process performed on a combination of the vicinal feature point of the first and second fingerprints and the virtual feature point (Figure 28).

Regarding claim 22, Fujii discloses the first and second fingerprints match in feature points to be checked and vicinal feature points match several times for the feature points to be checked, evaluation of a matching result is enhanced depending on a number of matching results (Col. 12, lines 3-7).

Regarding claims 23 and 45, the arguments analogous to those presented above for claim 1 are applicable to claims 23 and 45.

Regarding claims 31 and 46, the arguments analogous to those presented above for claim 9 are applicable to claims 31 and 46.

Regarding claims 40 and 47, the arguments analogous to those presented above for claim 18 are applicable to claims 40 and 47.

Regarding claims 24-30, 32-39, and 41-44, the arguments analogous to those presented above for claims 3-8, 10-17, and 19-22 are applicable to claims 24-30, 32-39, and 41-44 respectively.

***Other Prior Arts Cited***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 5,524,161 to Omori et al. for fingerprint image processing system capable of simply processing minutiae;

U.S. Pat. No. 4,944,021 to Hoshino et al. for identification system employing verification of fingerprints;

U.S. Pat. No. 5,937,082 to Funada for fingerprint/palmprint image processing apparatus;  
and

U.S. Pat. No. 5,960,101 to Lo et al. for expert matcher fingerprint system.

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***Contact Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia M Kibler whose telephone number is (703) 306-4072.

The examiner can normally be reached on Mon-Thurs 8:00 - 5:30 and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

*VK*

VK  
9/30/03

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